has been forgotten, and is without record in modern meteoric literature. The crystals—of the size, number, and completeness of which Haidinger makes no mention—were obtained by him from a nodule of graphite which had dropped out of the Arva meteoric iron, and chiefly from a study of their form he inferred that they were pseudomorphous after iron pyrites. Even yet no iron pyrites, crystallized or massive, has been found in a meteorite, the meteoric sulphide of iron being, not the bisulphide, but the protosulphide: further, Gustav Rose, after examination of the crystals, expressed the opinion that the replacement of the edges of the cubes was suggestive rather of holosymmetry than of hemisymmetry, an interpretation which would exclude iron pyrites as a possible antecedent mineral.

The Youndegin graphitic crystals support the view entertained by Rose: the existence of the dodecahedron face, of which there is goniometrical proof, is of itself quite sufficient to show that the crystalline form is distinct from that of iron pyrites.

The iron pyrites theory being discarded, and the fact being recognized that no mineral constituent of meteorites has yet been found which crystallizes in forms similar to those of the graphitic crystals, there naturally arises a feeling of doubt as to the correctness of the view according to which they are of pseudomorphic origin, and thus a question as to whether they may not possibly be a third allotropic condition of crystallized carbon presenting the general characters of graphite, but a crystalline form frequent in the diamond.

Bischof denies the possibility of explaining the pseudomorphism of terrestrial minerals by any other process than the slow action of water, of which there is no evidence in meteorites; and though it would be unsafe to argue that only in this way could meteoric pseudomorphs be produced, there is sufficient difficulty in their explanation to demand strong evidence before the pseudomorphism of the graphitic crystals is granted, more especially when we have regard to the fact that no other graphitic pseudomorph has yet been established either in meteoric or in terrestrial minerals.

Examination of the Youndegin crystals under the microscope shows that some of them are hollow, and appear to be built up of successive cubical shells: on several of the crystals there are globular growths covering a large part of a cube-face, and occasionally the globule is broken, and is seen to be merely a thin, now empty, shell, of which the bottom is the face of the cube. The crystals are easily frangible, and no cleavages were observed: they appear to be quite homogeneous in their material.

Although some of these characters suggest a pseudomorphic origin of the crystalline form, it cannot be said that they prove it. Both of the recognized crystalline forms of carbon, graphite and diamond, have long been standing difficulties for the crystallographer. As already pointed out, the crystals of graphite are rarely more than mere tables, of which there is a controversy as to the crystalline system; those of the diamond are often so different in their geometrical characters from the crystals of every other known substance, that it cannot be satisfactorily determined whether they are to be referred to a holosymmetric or to a hemisymmetric type.

Hollow and skeleton crystals are often the result of a hurried crystallization, as is so well seen in the artificial crystals of bismuth and of common salt. The diamond, too, when in cubes, has faces more uneven than those of the Youndegin crystals, and shows usually the same replacement of its edges by rounded faces of tetrakishexahedra.

It thus might be argued with some force that the Youndegin crystals have been the result of a hurried crystallization of carbon, and that, while striving to reach a dignity which has been assigned to cubes of diamond, they have been overtaken by misfortune and come out in cubes of the less honoured mineral, graphite. The obtuse, almost flat, square pyramid seen on some of the cube-faces, the hollow globular growths, the occasional parallelism of the grouping of the cubes are distinct, however, from what is met with in the diamond.

And after consideration of all the observed characters of these crystals it will be seen that the explanation of the occurrence of the crystals in the interior of a mass of iron by means of pseudomorphism is untenable. Though the easy frangibility, the absence of evidence of cleavage, the hollowness, and the occasionally crust-like structure, are more or less characteristic of pseudomorphic crystals, they are not incompatible with an independent crystallization: on the other hand, while the superior hardness distinguishes the crystals from those of native terrestrial graphite, the separateness, completeness, and general excellence of the crystals, the delicacy of various acicular projections, and more especially of the obtuse, almost flat, square pyramid seen on some of the cube-faces, are sufficient to prove that the crystalline form never had a previous tenant. The delicacy of the acicular projections is such that the crystals must have been formed *in situ*. In case of pseudomorphism the elements of the original mineral ought to be in the vicinity of the crystals, and there ought to be an excess either of the original mineral or of the replacing amorphous graphitic carbon: both are, however, conspicuous by their absence, and in this fragment of the iron the whole of the graphitic carbon is present as cubic crystals.

On examination of a large graphitic nodule from the Cocke County meteoric iron, now in the British Museum, crystals of graphitic carbon, cubo-octahedral in form, are to be seen in some of the crevices.

There can be absolutely no doubt that the graphitic crystals are the result of crystallization of the meteoric graphite, and that they represent a third allotropic condition of crystallized carbon, the general characters being those of graphite, and the crystalline system that of the diamond.

As this form of graphitic carbon is unknown among terrestrial minerals, and has so important a bearing on the formation of meteoric graphite, it may conveniently receive a special name; I suggest the term "cliftonite," after Prof. R. B. Clifton, F.R.S., who has long been interested in the physical characters of minerals, and has done much to encourage their study.

A full description of the meteoric iron itself and of the graphitic crystals will appear in the forthcoming number of the Journal of the Mineralogical Society.

L. FLETCHER.

NOTES.

WE are glad to learn that at the Naval Review (some lessons suggested by which we may refer to in a future number) 120 official invitations were sent out to men of science, while many were hospitably entertained by the Peninsular and Oriental, the Orient, the British India, and the Cable-Laying Companies. Some time next century we may hope that the existence of science, of a Royal Society, and of eminent scientific men employed in the public departments, may dawn upon the then Lord Chamberlain.

THE Jubilee dinner of the Electric Telegraph, which is going on as we go to press, is a brilliant affair, to which we shall refer at length next week.

WE print to-day the text of the Technical Education Bill. It was absolutely necessary that some such measure should be introduced, and we may hope that as it has no relation to party politics it will be passed without much difficulty. One change in the Bill ought certainly to be made. According to the fourth clause, there is to be no payment out of the local rate in respect of a scholar unless or until he has passed the sixth standard. This may be a very proper provision so far as boys are concerned;

but it must not be applied to the case of adults, many of whom should be encouraged to take advantage of the new system of technical instruction. A man of thirty would be extremely unwilling to go in for an examination in reading, writing, and arithmetic, but there is no reason why there should not be payment out of the local rate on his behalf, if he is disposed to enter upon a regular course of technical education. The more adults who can be induced to attend technical schools, the better for the working classes and for the country.

WE have received a circular bearing the signatures of W. E. Ayrton, Michael Carteighe, Alfred E. Fletcher, G. Carey Foster, Michael Foster, J. H. Gladstone, H. Forster Morley, William Odling, Sydney Ringer, H. E. Roscoe, W. J. Russell, and P. J. Worsley, who have either been pupils of Dr. A. W. Williamson during the thirty-eight years that he has been Professor of Chemistry in University College, London, or have been otherwise intimately associated with him. In this circular it is suggested that Prof. Williamson's resignation of his Chair affords a fitting opportunity for recording, in some permanent manner, the high appreciation of his influence as a scientific teacher, and the feeling of personal regard for him as a man, which are so generally entertained by those who know his work and character. It is accordingly proposed to ask him to sit for a portrait to be presented to University College, and subscriptions are invited for this purpose. As it is expected that this proposal will be widely responded to, one guinea is suggested as the ordinary amount of a subscription. Dr. W. J. Russell, F.R.S., 34 Upper Hamilton Terrace, N.W., has agreed to act as honorary treasurer of the fund to be collected, and Michael Carteighe, Esq., 36 Nottingham Place, W., and Dr. H. Forster Morley, University Hall, Gordon Square, W.C., as honorary secretaries.

THE Council of King's College, London, has elected Mr. J. W. Groves—Demonstrator of Practical Biology—to the Chair of Botany, rendered vacant by the resignation of Prof. Robert Bentley.

MR. W. L. SCLATER, B.A., of Keble College, Oxford, has been appointed by the Trustees of the Indian Museum, Calcutta, to be Deputy Superintendent of their Museum in succession to Mr. Wood Mason, who has become Superintendent upon the resignation of Dr. Anderson. Mr. Sclater, who was a pupil of Prof. Moseley, took a first class in the final Examination for Natural Science in 1885, and has since been working under Prof. Ray Lankester and Mr. Sedgwick, and for the last three years has prepared the report on mammals for the "Zoological Record." Last winter Mr. Sclater passed several months in British Guiana, under the hospitable roof of Mr. E. F. im Thurn, and made collections in several branches of natural history, which have been described in the Zoological Society's Proceedings.

THE summer meetings of the Institution of Naval Architects were opened on Tuesday in the hall of the Literary and Philosophical Society, Newcastle-on-Tyne. Lord Armstrong began the regular business of the conference by reading a paper by himself and Mr. J. Vavasseur on the application of hydraulic pressure to gunnery. A paper was also read by Mr. F. C. Marshall on recent developments in marine engineering. After the meeting the members were conveyed in brakes to the Elswick Works, where they were shown over the ordnance and ship-building departments, and were entertained to luncheon by Lord Armstrong.

AN Electrical Exhibition will be given in New York in the autumn by the New York Electrical Society. The Exhibition will be open from September 28 to December 3. It will include, says *Science*, "all that relates to the science and application of electricity in its broadest sense." As no electrical exhibition has ever been held in New York, it is expected that this one will attract a large number of visitors.

WE learn from *Science* that the American Committee of the International Congress of Geologists will present a report at the approaching meeting of the American Association concerning the positions to be taken by the representatives of American geologists at the next session of the Congress in London (1888), upon the more important questions of nomenclature, classification, and colouring, which will there be discussed. The Committee requests that a day may be set apart by Section E for the consideration of these questions, and it proposes that all American geologists (whether members of the American Association or not) shall be invited to attend this session and participate in the work.

WITH respect to the recent small but exceedingly fierce and destructive cyclone, which literally effaced a station on the coast of the Bay of Bengal, called False Point (NATURE, pp. 110 and 136), a correspondent writes to us from Calcutta :—"The storm was an exceedingly interesting one, and some of its features are quite different from those previously recorded. It is very noticeable in the fact that at the centre of the storm a lower pressure was recorded than during any storm that I have read of, for pressure fell to nearly 27 inches at sea-level. The rapidity with which the pressure fell was also extraordinary."

PROF. PEDLER, Principal of the Presidency College, Calcutta, who is in charge of the Bengal Meteorological Department, gave notice of the existence of this terrible storm in the middle of the Bay of Bengal five or six days before it broke over the land. He was also able to give twenty-four hours' notice of the precise part of the coast which the storm would (and did) cross. He hoisted warning signals in the river at Calcutta to prevent ships from leaving. Unhappily one steamer went out in spite of the signals, and foundered, with about 900 people on board, every one of whom was drowned. In obedience to the signals, six or seven other vessels remained in safety. Among these vessels were two steamers going to the same port as the one which foundered, and having about as many people on board. A large number of persons, therefore, owed their lives directly to meteorological science. It would be hard to conceive a more striking illustration of the practical value of meteorology.

WE have received the concluding part of the Quarterly Weather Report of the Meteorological Office for the year 1878. This volume is the third of the new series begun in 1876, and contains charts showing mean meteorological conditions for each month, a general summary of the weather for each quarter, and the usual tables giving the results derived from the records of the seven observatories then co-operating with the Office, together with continuous curves of the self-recording instruments. In an appendix is a paper by General R. Strachey, R.E., F.R.S., Chairman of the Meteorological Council, which will be very available for agriculturists. By the use of the tables the amount of the excess or defect of the daily temperature above or below any fixed minimum, below which active vegetation does not begin, may be easily obtained during the year from the ordinary temperature observations usually made; this could be effected previously only by a laborious calculation. The values of such "accumulated temperature," published in the Weekly Weather Report of the Meteorological Office, are calculated by these tables. The Monthly Weather Report, which began in 1884, and which is published nearly up to date, now takes the place of the Quarterly Reports.

THE *Meteorologische Zeitschrift* for July contains the concluding portion of Dr. Köppen's article on the classification of clouds (NATURE, June 30, p. 208). We are glad to see that in this second portion full justice is done to the recent researches of the Hon. R. Abercromby, and a lengthy report is given of the results of a conference between that gentleman and M. Hildebrandsson at Upsala at the end of 1886. This report points out that the study of the forms of clouds may be undertaken with different objects in view. If the object be weather-prediction, a detailed terminology is necessary, and for this purpose M. Hildebrandsson thinks Mr. W. C. Ley's classification of the higher clouds is unsurpassed. One of the principal objects is the determination of the directions of the wind in the higher regions of the atmosphere, and for this it is not necessary to distinguish so many forms; but we must be sure (1) that these forms are, generally speaking, everywhere the same, and (2) we must determine the mean heights of the various forms by direct measurements. With the view of settling the first point, Mr. Abercromby has made two voyages round the globe. The second question has been partially solved by the researches of MM. Ekholm and Hagström at Upsala (NATURE, June 30, p. 206). It is, however, necessary that such measurements should be made at various other places, and the same gentlemen intend to make further experiments elsewhere during this summer. Dr. Köppen concludes his article by some remarks on the history of the development of clouds, and recommends a series of observations in balloons similar to the celebrated ascents made many years ago by Mr. Glaisher. The same number of the *Zeitschrift* contains interesting articles on the results of meteorological observations during solar eclipses, by Mr. Winslow Upton, and on the method of counting the number of rainy days in various countries, and its influence on the resulting period of rain-frequency, by Dr. E. Brückner, of Hamburg. The amount of rainfall which is taken as representing a rainy day differs considerably in different countries. The author recommends the general adoption of 0·005 inch, without reference to whether it be caused by rain, snow, dew, &c. The amount has not yet been definitely fixed by the Meteorological Congresses, but that adopted by this country is 0·01 inch (or 0·005 inch where the rainfall is measured to thousandths of an inch). The International Polar Committee have adopted 0·1 millimetre (=0·004 inch) as representing a rainy day in all their publications, while for Prussia twice that amount is taken as the minimum quantity.

TIME-SIGNALLING on the German coasts began (we learn from a recent paper by Prof. Foerster) twelve years ago, and there are at present seven time-balls in action; viz. at Bremerhaven, Cuxhaven, Swinemünde, Neufahrwasser, Wilhelmshaven, Kiel, and Hamburg. In this respect, our country stands first. We began some thirty years ago, and have at present fourteen time-balls on our coasts, also five other arrangements for the same end. In our colonies and dependencies there are twenty-six time-balls. France possesses four time-balls (and two other arrangements); Sweden and Norway, Austria-Hungary, Holland with Belgium, and the United States, have five each; Denmark has two; Spain and Portugal one each. Italy has none as yet.

THE list of examples illustrating the law of isomorphism has just received a strong reinforcement at the hands of M. Charles Fabre, who describes in the last number of the *Comptes rendus* the result of his attempt to prepare a series of selenium alums isomorphous with the corresponding double sulphates. Following up the work of Wohlvil, Wöhler, and Pettersson, Fabre has succeeded in preparing double selenates of the general formula $Al_2(SeO_4)_3 . M_2SeO_4 . 24H_2O$, in which M represents respectively potassium, sodium, cæsium, rubidium, thallium, ammonium, ethylamine, di- and tri-ethylamine, and propylamine. Each of these alums crystallizes in the cubic system, generally in colourless octahedra; and some of them, notably the double selenate of aluminium and thallium, form exceptionally beautiful crystals. Further, the French chemist finds, as might be expected, that chromium forms a similar series of isomorphous double selenates, most of which build up splendid octahedra, black by reflected and violet by transmitted light. These alums are comparatively easy to obtain crystallized if the temperature be kept low, but at slightly elevated temperatures the small amount of chemical attraction by which the two constituent selenates are constrained to combine together in molecular proportions is overcome, and the alum can never be formed.

THE last numbers of the Journal of the China Branch of the Royal Asiatic Society (vol. xxi. Nos. 1 and 2) contain an interesting "symposium" on the question whether the Chinese should be taught Western science through the medium of their own or a European language. If the latter, no doubt the language would be English. The stumbling-block in the way of teaching science to the Chinese is the difficulty, not to say impossibility, of finding Chinese equivalents for the terms of our science. The Japanese have made the attempt at translation, but do not appear to be quite satisfied with the result. The missionaries who take part in the discussion appear to be of opinion that the Chinese language is the best medium, while on the other side it is contended that as long as it is taught by foreigners it had better be taught in a foreign language, "and probably by foreigners who have not had their faculties paralyzed by the task of mastering the Chinese language." Most of the laymen appear to be of this opinion. The question, after all, appears to be one of terminology; for if this difficulty can be overcome there is, we presume, no dispute that men, whether Orientals or Europeans, can best acquire knowledge through the medium of their native tongue. In the terminology the question appears, in Japan at least—and the same is doubtless true of China—to be whether the terms of Western science should be translated approximately or transliterated approximately. Should there be, for example, an attempt to reproduce by transliteration the words *hydrogen*, *nitrogen*, *logarithm*, &c., or an attempt to translate their meanings into concise terms which will take their places in Chinese and Japanese science? In either case the student will have to learn a new terminology, exactly as students in the West do. This is a point for Oriental scholars to decide, but it certainly does seem at first sight that transliteration is preferable to translation, for in the latter there is room for dispute and differences of opinion and practice, while the former has severe simplicity to recommend it.

SEVERE earthquakes were noticed on July 11 in the Hungarian districts of Arad, Temesvar, and Torontal.

ON July 17 shocks of earthquake were felt at Catania, Lecce, Ischia, Livorno, and Parma. Oscillations were felt in Rhodes, Crete, and Chios, and at Smyrna. Several houses were damaged at Canea, and in Rhodes a part of the fortress-wall and some chimneys were destroyed.

M. BURCH says, in *Cosmos*, that in America he saw six wild geese, when flying in a storm, killed by lightning.

THE French Academy of Sciences has received the Giffard legacy of 50,000 francs, and has resolved to employ the interest in grants to learned men in pecuniary difficulties.

PROF. LUNGE, of Zurich, has re-written and added to the treatise on "Coal-Tar Distillation" which he brought out in 1882. The new edition, with many new working drawings, will be ready very soon, and Messrs. Gurney and Jackson, Mr. Van Voorst's successors, are to publish it.

IN the *Moniteur Belge* of the 3rd inst., a Royal decree was published nominating the Vice-Presidents, Chief Secretary, and staff of the Scientific and Industrial Competition which is to be held in Brussels next year. M. Charles Mourlon is the Chief Secretary.

Mr. Hilcken, Librarian of the Bethnal Green Free Library, writes to us that the Library is greatly in need of one or two microscopes. "We have received," he says, "a present of interesting 'objects,' but they are useless without microscopes. Many of our readers would gladly avail themselves of the use of such instruments."

Dr. R. H. Gunning, of Rio de Janeiro and Edinburgh, has made the following munificent gifts in connexion with Her Majesty's Jubilee:—To the Council of the Royal Society of Edinburgh, a triennial prize of £105, to be named "The Victoria Jubilee Prize for the Advancement of Science." To the Council of the Society of Antiquaries of Scotland, £40 yearly, or £120 every three years, as they may prefer, to be named "The Victoria Jubilee Gift," the object of the founder being to assist experts to travel, with the view of "examining other collections, and keeping the Edinburgh Museum as completely furnished with information and examples as possible." To the Senatus of the University of Edinburgh, £200 per annum, to provide eleven post-graduation triennial prizes of £50 each. These are to be named the Monro, Sir Charles Bell, Edward Forbes, Hutton Balfour, Joseph Black, Christison, Lister, Gregory, John Thomson, Simpson, and Alison Prizes, and are to be administered by the Senatus, the incumbent of the Chair in connexion with which the prize is to be awarded having a wide choice in the subjects of examination. To the Royal College of Physicians of Edinburgh, £100 triennially, for a prize to bear the title "Dr. Gunning's Cullen Prize for the greatest benefit done to Practical Medicine." To the Royal College of Surgeons of Edinburgh, £120 triennially, for a prize to be called "The Liston Victoria Jubilee Prize," which shall be open to all Fellows and Licentiates of the College, and shall be awarded for the greatest benefit done to practical surgery. To the Edinburgh Association for the University Education of Women, £40 annually for a bursary to be called "The Victoria Jubilee Bursary." In addition to the above, Dr. Gunning has intimated, through Lord Maclaren, a gift of £100 for the Ben Nevis Observatory. Dr. Gunning, who was long resident in Brazil, is a Dignitary of the Brazilian Empire, a Fellow of the Royal Society of Edinburgh, and a Fellow of the Society of Antiquaries of Scotland.

The additions to the Zoological Society's Gardens during the past week include a Bonnet Monkey (*Macacus sinicus* ♂) from India, presented by Mr. Francis Yare; a Cape Zorilla (*Ictonyx zorilla*) from Cape Colony, presented by Mr. J. A. Willet; a Spotted Ichneumon (*Herpestes nepalensis*) from Nepal, presented by Mr. T. C. Bacon; two Spotted Cavys (*Cœlogenys paca*) from South America, presented by Mr. William F. Kirton; an Arizona Squirrel (*Sciurus arizinensis*) from New Mexico, U.S.A., presented by Dr. R. W. Shufeldt; a Common Cuckoo (*Cuculus canorus*), British, presented by Mr. W. M. Alexander; a Lesser Kestrel (*Tinnunculus cenchris*), South European, presented by Mrs. M. Travers; two Corn Crakes (*Crex pratensis*), British, presented by Mr. S. C. Hincks; two Cardinal Grosbeaks (*Cardinalis virginianus*) from North America, presented by Mr. Samuel Nicholson; two Hybrid Herring Gulls (between *Larus argentatus* and *Larus dominicanus*), presented by Lord Lilford; two Viperine Snakes (*Tropidonotus viperinus*) from North Africa, a Bordeaux Snake (*Coronella girondica*), South European, presented by the Rev. T. W. Haines; a Grey Ichneumon (*Herpestes griseus*) from India, an Aldrovandi's Skink (*Plestiodon auratus*) from North Africa, deposited; a Crested Porcupine (*Hystrix cristata*), born in the Gardens; two Slender Ducks (*Anas gibberifrons*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

The Total Solar Eclipse of 1886.—Mr. W. H. Pickering, who observed the total solar eclipse of August 1886 at Grenada, W.I., communicates to *Science*, vol. x. No. 230, a brief account of his results, in order that it may be published in time to be of service to the observers of the approaching eclipse on August 18. It was found that, by using rapid gelatine plates, an exposure of one or two seconds was sufficient to show the details of the inner corona satisfactorily with an ordinary telescope-lens. With a portrait-lens, the ratio of whose aperture to its focus was as one to five, the same exposure showed the outer corona satisfactorily as far as a distance of 15′ to 30′ from the limb of the moon. Beyond that the light was very decidedly fainter, and was shown best by exposures of from eight to forty seconds. The corona showed the usual short rays proceeding from the sun's poles, and from the south-western quadrant a very conspicuous ray, appearing like a hollow cone, projected to a distance of about 20′. A number of prominences were seen near the equator, on both sides of the moon; but the most conspicuous one was situated in the north-western quadrant. It extended to the height of about 100,000 miles, and had apparently a somewhat spiral structure. The spectra of the various prominences were shown very clearly by the prismatic camera. In the equatorial ones the hydrogen and H and K lines were prominent, superposed on a background of continuous spectrum; but in the large prominence the hydrogen lines were absent, although the H and K lines were strongly marked. The position of the maximum density in the continuous spectrum of the prominences was found to be quite different from that of the corona; in the former it is not far from G, whilst in the latter it lies between G and F. A large number of persons observed the shadow-bands, which appeared before and after totality. The general result of their observations indicated that the bands were about 5 inches wide and 8 inches apart, that they were coloured like the spectrum, and that they moved with a velocity comparable with that of an express train; at all events much faster than a man could run. Before totality the bands lay N. 12° W. and S. 12° E., and travelled west; after totality they lay N. 60° E. and S. 60° W., and travelled north-west.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1887 *JULY* 31—*AUGUST* 6.

(For the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on July 31

Sun rises, 4h. 24m.; souths, 12h. 6m. 9·1s.; sets, 19h. 48m.; decl. on meridian, 18° 18′ N.: Sidereal Time at Sunset, 16h. 24m.

Moon (Full on August 3) rises, 17h. 15m.; souths, 21h. 36m.; sets, 1h. 56m.*; decl. on meridian, 19° 37′ S.

Planet.	Rises.	Souths.	Sets.	Decl. on meridian.
	h. m.	h. m.	h. m.	° ′
Mercury	4 26	11 46	19 6	14 35 N.
Venus	8 41	14 53	21 5	1 42 N.
Mars	2 2	10 20	18 38	23 35 N.
Jupiter	11 56	17 10	22 24	9 45 S.
Saturn	3 26	11 24	19 22	20 47 N.

* Indicates that the setting is that of the following morning.

Variable Stars.

Star.	R.A.	Decl.				
	h. m.	° ′			h. m.	
U Cephei	0 52·3	81 16 N.	Aug.	1,	21 30	*m*
			,,	6,	21 9	*m*
Algol	3 0·8	40 31 N.	,,	1,	22 54	*m*
V Boötis	14 25·2	39 23 N.	,,	5,		*M*
δ Libræ	14 54·9	8 4 S.	,,	5,	22 24	*m*
V Coronæ	15 45·5	39 55 N.	,,	4,		*M*
R Ursæ Minoris	16 31·5	72 30 N.	,,	5,		*m*
U Ophiuchi	17 10·8	1 20 N.	July	31,	4 2	*m*
		and at intervals of			20 8	
W Sagittarii	17 57·8	29 35 S.	Aug.	2,	1 0	*m*
T Herculis	18 4·8	31 0 N.	,,	2,		*M*
η Aquilæ	19 46·7	0 43 N.	,,	2,	2 0	*M*
				6,	21 0	*m*
S Sagittæ	19 50·9	16 20 N.	,,	5,	21 0	*m*
δ Cephei	22 25·0	57 50 N.	July	31,	4 0	*M*
			Aug.	3,	22 0	*m*

M signifies maximum; *m* minimum.